**Homework 40** Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Geometric Formulas** Period:\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_   
**SHOW ALL WORK AND WRITE IN COMPLETE SENTENCES OR ELSE LASALLE. MUAHAHAHA.**

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| 1. The surface area of a rectangular prism is given use the formula where *l* is the length, *w* is the width, and *h* is the height of the prism. Find the surface area of a prism with a length of 5 cm, a width of 6 cm, and a height of 8 cm. | 2. A Campbell’s soup can has a diameter of 3 inches and a height of 5 inches. Given that the formula for the volume of a cylinder is , how many cubic inches of soup fit in the can? |
| 3. Given that the volume of a cone is , find the volume of the cone below with a height of 22 m and a diameter of 22 m. | 4. The formula of the volume of a prism is where *l* is the length, *w* is the width and *h* is the height of the brick. What is the height of a box if its volume is 27 m3, its length is 3 m and its width is 3 m? |
| 5. In the figure below, XY WZ and XR WZ. XY = 22 cm, WZ = 38 cm, XW = 9 cm, and XR = 5 cm. Point W, R, and Z are collinear, and point R lies between W and Z. What is the area of the figure?  X 22 Y  9  5  W R 38 Z  Note: A trapezoid’s area is calculated by the formula | 6. The volume of a trapezoidal prism is calculated by the formula  where *a* is the height of the trapezoid, and is the lengths of the bases of the trapezoid, and *h* is the height of the prism.  In the trapezoidal prism below, the height of the trapezoid is 5.5 m, one base is 7 m, another base is 12 m, and the height of the prism is 14 m. What is the volume of the prism? |

**BEFORE WATCHING THE KHAN ACEDMY VIDEO**, solve the following problem:

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| Find the area of the trapezoid below, given that the formula is  9 m    6 m 8 m  15 m |

Now watch the following video: <http://www.khanacademy.org/video/area-of-a-trapezoid?playlist=Developmental+Math+2>

Or search for “Area of a Trapezoid” at [www.khanacademy.org](http://www.khanacademy.org) where it says “Search for a video or playlist”

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| 1. What formula does Khan provide for the area of a trapezoid? (Use variables and not numbers.) | 2. Show all work in the problem that Khan solves in finding the area of a trapezoid. (Use the numbers given in the video.) |
| 3. Compare this formula to the formula given above for the area of a trapezoid: .  Are both formulas correct? Why or why not?  X  X  X  X  X  X  X | 4. Try to model the diagram that Khan creates in the video, and explain in your own words how this relates to the formula provided.  X  X  X  X  X  X  X |